

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,829,099 B2  
DATED : December 7, 2004  
INVENTOR(S) : Takashi Kato et al.

Page 1 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2,

Line 14, "diffrative" should read -- diffractive --.

Column 3,

Line 64, "including many" should read -- include a lens group of negative refractive power as well as many additional lenses. Further, the second imaging system should include many --.

Column 7,

Line 4, " $\emptyset_0$ " should read --  $v_0$  --.

Column 8,

Line 8, " $+ \emptyset_0 - \wedge_0$  is" should read --  $+ \emptyset_0 - \wedge_0$  --.

Line 11, "determines" should read -- determine --.

Column 9,

Line 16, "pull." should read -- pupil --.

Line 40, "a feature" should read -- features --.

Column 10,

Line 25, "power." should read -- powers. --.

Column 12,

Line 17, "position M1 the" should read -- position of the first mirror M1 with --.

Line 38, "As regards" should read -- In regards to --.

Column 13,

Line 33, "L—about" should read -- L = about --.

Column 14,

Line 25, "or or" should read -- or --.

Line 44, "of an" should read -- or an --.

Column 16,

Line 31, "provisions" should read -- provision --.

Line 46, "or or" should read -- or --.

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Column 18,

Line 56, "As regards" should read -- In regards to --.

Line 58, "be" should be deleted.

Column 19,

Line 31, "As regards" should read -- In regards to --.

Column 21,

Line 33, "As regards" should read -- In regards to --.

Column 22,

Line 32, " $\phi(r)$ " should read --  $\emptyset(r)$  --.

Line 37, " $\phi(r)$ " should read --  $\emptyset(r)$  --.

Column 23,

In the top-most chart, in the next to the last column, in the line for  $i = 14$ , "1.795636e-018" should read -- 1.795636e-016 --.

In the second table down from the top, under column "F," the fifth entry down, "-4305381e-029" should read -- 4.305361e-029 --.

In the chart entitled "aspherical surfaces," in the upper level, in column "C," the second entry down, "2.204553e-018" should read -- 2.204553e-016 --; the third entry down, "2.342867e-016" should read -- 2.342867e-015 --; and the sixth entry down, "7.019205e-017" should read -- 7.019206e-017 --.

Continuing in the chart entitled "aspherical surfaces," in the lower level, in column "E," the third entry down, "3.479851e-022" should read -- 3.479651e-022 --; and the fifth entry down "-9.983269e-026" should read -- -9.983259e-026 --.

Column 25,

In the chart entitled "HOE surfaces," in column "C3," the first-listed entry "-5.114866e-014" should read -- 5.114855e-014 --.

In the chart under "Example 3," in column "di," the third entry down, "24.168" should read -- 24.160 --.

In the chart entitled "aspherical surfaces," in the upper level, under column "A," the seventh entry down, "1.356704e-008" should read -- 1.355704e-008 --; under column "C," the second entry down, "-6.075624e-016" should read -- -5.075624e-015 -- and the seventh entry down, "1.115481e-017" should read -- 3.115481e-017 --.

In the chart entitled "aspherical surfaces," in the lower level, under column "E," the sixth entry down, "-2.958951e-026" should read -- -2.958961e-026 -- and the eighth entry down, "7.981582e-024" should read -- 7.961582e-024 --.

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Column 27,

In the header row for the first table under "Example 4," "Obj-distance = 58.499" should read -- Obj-distance = 68.499 -- and under column "di," the twenty-first entry down "1.360" should read -- 3.360 --.

The chart entitled "aspherical surfaces" should be deleted and the following inserted therefor:

aspherical surfaces

i	K	A	B	C	D
1	0.000000e+000	-1.581866e-009	2.986153e-013	-5.223610e-019	2.824161e-021
3	0.000000e+000	6.458325e-009	-2.072192e-013	-1.342548e-018	-1.997125e-021
6	0.000000e+000	2.854928e-009	2.852185e-015	1.944709e-019	1.479079e-023
7	0.000000e+000	5.949273e-009	1.153698e-013	2.886980e-018	2.989787e-022
9	0.000000e+000	-7.761800e-012	6.197164e-016	1.092259e-019	1.709278e-023
11	0.000000e+000	5.949273e-009	1.353698e-013	2.886980e-018	2.989787e-022
12	0.000000e+000	2.854928e-009	2.852185e-015	1.944709e-019	1.479079e-023
15	0.000000e+000	-5.267907e-009	1.973015e-014	2.604847e-019	6.885808e-024
22	-1.224806e+000	-8.388881e-009	-4.384285e-013	-1.210442e-018	-1.082590e-022
24	0.000000e+000	-7.333591e-009	2.665449e-013	-8.665404e-019	-3.588834e-022
26	0.000000e+000	-1.629113e-008	-1.388388e-012	-1.440922e-018	2.053203e-020

i	E	F	G
1	-1.736212e-025	2.009467e-029	0.000000e+000
3	2.872877e-025	-1.766891e-029	0.000000e+000
6	2.402849e-028	-5.549594e-032	0.000000e+000
7	-1.486784e-026	5.643220e-031	0.000000e+000
9	-5.671144e-028	2.416267e-032	0.000000e+000
11	-1.486784e-026	5.643220e-031	0.000000e+000
12	2.402849e-028	-5.549594e-032	0.000000e+000
16	1.538947e-028	-2.714268e-032	0.000000e+000
22	2.100909e-027	-9.830355e-032	0.000000e+000
24	1.160342e-028	-2.841121e-031	0.000000e+000
26	-2.639599e-024	1.018509e-028	0.000000e+000

In "Example 5," under column "di," the first-listed entry, "26.576" should read -- 25.576 --.

Column 29,

In the top-most chart, in line "6," "477.676" should read -- 477.675 -- and in line "12," "75.388" should read -- 75.386 --.

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Column 29 (cont'd),

The charts entitled "aspherical surfaces" and "HOE surfaces" should be deleted and the following inserted therefor:

aspherical surfaces

	K	A	B	C	D
4	0.000000e+000	7.291434e-008	1.525464e-013	-4.370274e-017	9.676587e-021
5	0.000000e+000	2.289609e-007	8.494121e-011	8.536915e-015	-5.523997e-017
6	0.000000e+000	-3.198764e-010	1.064840e-013	-2.385073e-017	7.044913e-021
9	0.000000e+000	1.903694e-008	-2.320265e-013	1.379107e-016	-4.684628e-020
16	0.000000e+000	1.942539e-008	-5.073137e-013	1.672925e-016	-1.060443e-020
20	0.000000e+000	2.305267e-008	1.672101e-011	-1.060029e-015	4.230949e-020
22	0.000000e+000	-2.862585e-008	-3.792831e-011	-4.848849e-015	-8.821508e-019

	E	F	G
4	-1.058492e-024	4.868237e-023	0.000000e+000
5	2.348477e-020	6.622633e-024	0.000000e+000
6	-1.347591e-024	1.040887e-023	0.000000e+000
9	8.828518e-024	-4.445103e-023	0.000000e+000
16	-4.135322e-024	3.704197e-023	0.000000e+000
20	-1.206593e-024	-1.271080e-023	0.000000e+000
22	6.124684e-023	-2.73653e-027	0.000000e+000

HOE surfaces

	C1	C2	C3	C4	C5
13	9.272145e-004	-2.752225e-006	-2.193748e-013	9.832634e-018	2.854594e-021
17	7.020826e-004	-2.881081e-009	-1.044493e-012	-1.326484e-016	1.828203e-021

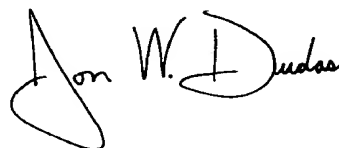
	C6	C7	C8
13	-4.151596e-023	2.213188e-028	0.000000e+000
17	2.493462e-024	-2.158400e-028	0.000000e+000

Column 31,

Line 63, "optical" should read -- optical system --.

Signed and Sealed this

Tenth Day of May, 2005



JON W. DUDAS

Director of the United States Patent and Trademark Office